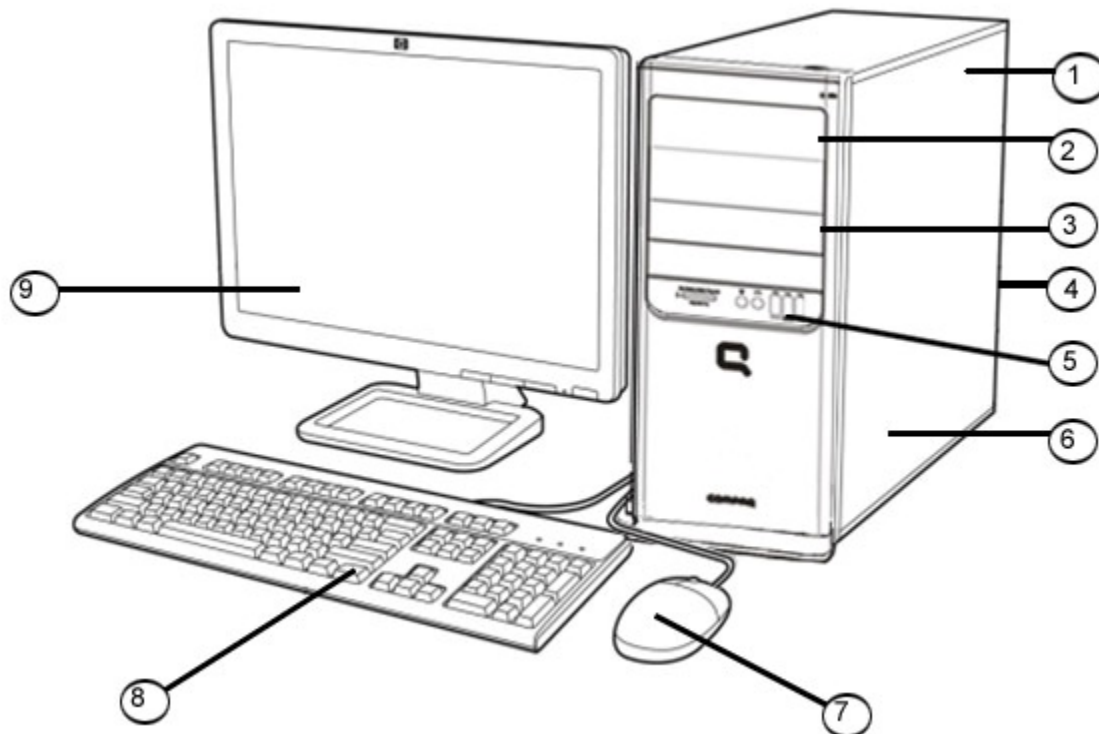


Overview



1. 180-watt power supply
2. (1) external 5.25-inch bay for optional optical drive
3. (1) internal 3.5-inch bay for hard disk drive
4. Rear I/O includes (4) USB 2.0 ports, RJ-45 network port, VGA video port, audio in/out jacks, microphone jack
5. Front I/O includes (3) USB 2.0 ports, audio in/out jacks, Media Card Reader
6. Full height expansion slots include PCIe x1 slots (2)
7. Compaq USB Optical Scroll Mouse
8. Compaq USB Standard Keyboard
9. Monitor (sold separately)

At A Glance

- AMD Athlon II X2 Processor
- Choices of Operating systems:
 - Genuine Windows 7 Professional Edition 64*
 - FreeDOS
- AMD 760G Chipset
- DDR3 SDRAM PC3-10600 (1333 MHz) non-ECC system memory
- ATI Radeon 3000 Graphics
- PCI and PCI Express I/O buses
- Serial ATA controller
- USB 2.0 support
- Realtek RTL8105E 10/100Mbps Ethernet Controller
- Choice of hard drives
- Protected by HP Services. Terms and conditions vary by country. Certain restrictions and exclusions apply.

Standard Features and Configurable Components (availability may vary by country)

Processor and Speed AMD Athlon II Dual Core Processors with HyperTransport Technology:

One of the following AMD Athlon II X2 215 Processor (2.7 GHz, 2MB L2 cache, HT bus 3.0)

Operating Systems and Preinstalled

Genuine Windows 7 Professional Edition 64*

Application Software

FreeDOS

(availability varies by region)

* System may require upgraded and/or separately purchased hardware and/or a DVD drive to install the Windows 7 software and take full advantage of Windows 7 functionality. See: <http://www.microsoft.com/windows/windows-7/> for details.

+ Windows 7 Professional disk may also be included for future upgrade if desired. To qualify for this downgrade an end user must be a business (including governmental or educational institutions) and is expected to order annually at least 25 customer systems with the same custom image.

2007 Microsoft Office Ready PC

PDF Complete

CyberLink LabelPrint

CyberLink Power2Go

LightScribe Runtime

HP Vision Diagnostics

Corel WinDVD

CyberLink Recovery Manager

McAfee Total Protection - Small Business

++ Supporting software available with certain optical drive configurations

Hard Drives

320-GB Serial ATA 3.0-Gb/s NCQ, Smart IV (7200 rpm)

500-GB Serial ATA 3.0-Gb/s NCQ, Smart IV (7200 rpm)

640-GB Serial ATA 3.0-Gb/s NCQ, Smart IV (7200 rpm)

750-GB Serial ATA 3.0-Gb/s NCQ, Smart IV (7200 rpm)

System Memory

2-GB DDR3 Synch DRAM 1333-MHz Non-ECC (2 x 1GB)

2-GB DDR3 Synch DRAM 1333-MHz Non-ECC (1 x 2GB)

3-GB DDR3 Synch DRAM 1333-MHz Non-ECC (1 x 2GB, 1x1GB)

4-GB DDR3 Synch DRAM 1333-MHz Non-ECC (2 x 2GB)

NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. The actual memory speed for DDR3 SDRAM depends on the maximum speed supported by the processor; for example, it may be limited to 1066 MHz.

Optical Drive

SATA SuperMulti LightScribe DVD Writer Drive

Input Devices**Keyboard**

Compaq USB Standard Keyboard

Mouse

Compaq USB Optical Scroll Mouse

Standard Features and Configurable Components (availability may vary by country)

Audio ALC662-VC1 5.1 channel codec
3D audio compliant and HD Audio compatible

Communication Realtek RTL8105E 10/100Mbps Ethernet Controller

Graphics ATI Radeon 3000 Graphics

System Details

Base Unit

- Micro ATX microtower chassis, including power supply and front bezel
- Two (2) drive bays and two (2) expansion slots
- Active type heatsink
- System board with AMD 760G chipset, Realtek RTL8105E 10/100 Ethernet controller, ATI Radeon 3000 graphics, and Realtek audio, (2) PCIe x1 slots, (2) DDR3 DIMM memory slots, (4) Serial ATA data connectors
- Product documentation on HDD Image
- HP system restore thru HDD restore
- Power cord

Slots	PCI	Two (2) full-height PCIe x1 slots
	Memory Expansion	Two (2) DDR3 SDRAM DIMM slots (4 GB maximum memory support)

Bays	Internal	One (1) 3.5"
	External	One (1) 5.25"

USB Support	EHCI high-speed USB 2.0 controller Three (3) front ports; Four (4) rear ports, Two (2) internal ports on system board
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Interfaces	Front: (3) USB 2.0 ports, audio in/out jacks Rear: (4) USB 2.0 ports, RJ-45 network port, VGA video port, audio in/out jacks, microphone jack
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Weight & Dimensions	Chassis Dimensions (H x D x W)	373 x 365 x 165mm 14.68 x 14.37 x 6.49 in
	Packaged Dimensions (L x H x W)	585 x 498 x 245mm 23.03 x 19.61 x 9.65
	System Weight	22.4 lb (10.2 kg)
	Shipping Weight	30.8 lb (14.0 kg)

Technology and Features	Memory Type	PC3-10600 DDR3 SDRAM (1333MHz) non-ECC Up to 4-GB maximum system memory supported
	Hard Drive Interfaces Supported	Serial ATA

System Details

Chassis	Front Panel	Power button Power On LED HDD Activity LED
	Cooling Solutions Supported	Power Supply Fan (variable speed) Active heatsink (variable speed) Chassis fan
	Slots Supported	Two (2) full-height expansion slots
	Front I/O	(3) USB 2.0 ports, audio in/out jacks
	Rear I/O	(4) USB 2.0 ports, RJ-45 network port, VGA video port, audio in/out jacks, microphone jack
	Drive Bays	One (1) 5-1/4" external One (1) 3-1/2" internal
	Internal Speaker	N/A
	Security	Padlock loop Kensington Lock Support Support for chassis padlocks and cable lock devices
	Power Supply	180-watt ATX Power Supply - PFC/non-PFC with a 115v/230v line switch (varies by country/region)

Unit Environment and Operating Conditions

General Unit Operating Guidelines

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold, to ensure that unit is operated within the specified operating range.
- Leave a 4 in (10.2 cm) clearance on all vented sides of the computer to permit the required airflow.
- Never restrict airflow into the computer by blocking any vents or air intakes.
- Do not stack computers on top of each other or place computers so near each other that they are subject to each other's re-circulated or preheated air.
- Occasionally clean the air vents on the front, back, and any other vented side of the computer. Lint, dust and other foreign matter can block the vents and limit the airflow.
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply.

Temperature Range	Operating	32° to 104° F (0° to 40° C)
	Non-operating	-22° to 149° F (-30° to 65° C)
Relative Humidity	Operating	10% to 90% (non-condensing at ambient)
	Non-operating	5% to 95% (non-condensing at ambient)
Maximum Altitude (unpressurized)	Operating	10,000 ft (3048 m)
	Non-operating	30,000 ft (9000 m)

NOTE: Operating temperature is de-rated 1.0 deg C per 1000 ft (300 m) to 10,000 ft (3000 m) above sea level, no direct sustained sunlight. Maximum rate of change is 10 deg C/Hr. The upper limit may be limited by the type and number of options installed.

System Details

System Board	Processor	Socket AM3; industry standard Micro ATX form factor Supports AMD Phenom™ II Quad and Dual Core processors, AMD Athlon™ II Quad, Triple, and Dual Core processors	
	PWM	ISL6312 - 3 Phase	
	Chipset	AMD 760G	
	Super I/O	IT8758E	
	Front Side Bus Frequency	HT3 (up to 5.2GT/s)	
	Memory	DDR3 SDRAM 2 x DIMM slots	
	Clock Generator	SLG8LP625TTR	
	Integrated Graphics	ATI Radeon 3000	
	Audio	ALC662-VC1 5.1 channel codec	
	LOM	Realtek RTL8105E 10/100 Fast Ethernet controller	
	Storage	Four Serial ATA interfaces (hard drive and optical drive)	
	Expansion Slots	2 x PCIe x1 slots	
	BIOS	SPI EEPROM	
	Industrial Standard	PCI 2.3 compliant USB 2.0	
	Rear Side I/O Ports	4 x USB 2.0 ports 1 x RJ-45 10/100 port 1 x D-sub 15 pin analog VGA port 3 x audio ports	
	On Board I/O Interfaces	1 x ATX power connector 1 x +12V power connector 1 x Front panel connector, Switch, LED (ON/Flash/OFF) 2 x Fan headers for CPU, chassis, with voltage/fan speed control 1 x header to support 2 USB 2.0 ports at front side 1 x header to support 2 front (Headphone/Mic) audio ports 1 x header to support USB media reader	
	Board Size	Micro-ATX, PCB Size: 9.6 x 9.6 in (24.38 x 24.38 cm) 4-layer PCB with green color	
	Additional Features	<ul style="list-style-type: none"> ● Bootable without keyboard, mouse or monitor ● Keyboard/mouse/USB wake up ● Support S3, S4 and S5 ● ACPI status ● Hardware monitor capability ● CPU fan speed control 	

Network Interface	Integrated Realtek RTL8105E 10/100 Fast Ethernet Controller	Hardware Highlights Features	PCIe x1 interface 10-Mbps and 100-Mbps operation Crossover detection and auto-correction Wake-on-Lan and remote Wake-up (Wake-on-LAN supported from S3, S4 only. Not supported from S5)
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System Details

Power Supply

- ATX Power Supply - Passive PFC/non-PFC with a 115v/230v line switch
- Passive Power Factor Correction (PFC) - with line switch set to 230V - No PFC in 115V line switch position
- 90 to 140VAC, or 180 to 264VAC operating voltage range
- 100 to 127VAC, or 200 to 240VAC rated voltage range
- 50-60 Hz rated line frequency
- 47-63 Hz operating line frequency range
- 180 watt maximum rated power
- 80-mm power supply fan - variable speed for optimum acoustics

Power Conservation 'Energy Saver'

- APM 1.2 support
- Screen blanking
- Hard drive 'Idle' mode
- System Idle mode
- ~2 watt power consumption in ES mode - suspend to RAM (S3) (instantly available PC)
- Processor/Cache memory power-down (S3)
- Eup Lot 6 - less than 1W with BIOS setup option (Max power savings)

System Environmental Specs

- Values are subject to change without notification and are for reference only.
- Performance of system, options, and ancillary equipment will vary depending on the system configuration.
- Levels presented do not account for non-HP/Compaq installed hardware.

Ambient Air Temperature	Operating	32° to 104° F (0° to 40° C) at sea level with an altitude de-rating of 1.0°C per every 1000 ft (300 m) above sea level to a maximum of 8000 ft (2500 m), no direct sustained sunlight. Maximum rate of change is 77°F/Hr (25°C/Hr). The upper limit may be limited by the type and number of options installed.
	Storage	-22° to 149° F (-30° to 65° C) Maximum rate of change: 410°F/Hr (210°C/Hr).
Humidity	Operating	10% to 90% relative humidity (Rh), 86°F (30°C) maximum wet bulb temperature, non-condensing.
	Storage	10% to 95% relative humidity (Rh), 101.66°F (38.7°C) maximum wet bulb temperature, non-condensing.
Altitude	Operating	0 to 10,000 feet (0 to 3048 meters) - This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 1,000 ft/min (304.8 m/min).
	Non-Operating	0 to 30,000 feet (0 to 9,144 meters) - Maximum allowable altitude change rate is 1200 ft/min (365.76 m/min).
Shock		Listed are the levels of shock the product can withstand with NO damage being incurred. The values represent peak input acceleration during a 2 to 3 ms half-sine shock pulse, 11 ms trapezoidal shock pulse.
	Non-Operating	35G's (Half-sine Shock) 35G's (Trapezoidal Shock)
Vibration		Listed are the levels of vibration the product can withstand with NO damage being incurred. The values represent a flat random vibration input acceleration profile across the given frequency range.

System Details

Operating	Random vibration at 5Hz@0.00025G ² /Hz, 10Hz@0.01G ² /Hz, 100Hz@0.01G ² /Hz, 300Hz@0.00001G ² /Hz 5Hz to 300Hz, (0.25G's nominal).
Non-Operating	Random vibration at 0.008G ² /Hz, 10Hz to 500Hz, (2 Grms nominal).

Service and Support On-site Warranty^{Note 1}: One-year (1-1-0) limited warranty delivers one year of on-site; (1-1-1) on selected countries, next business-day^{Note 2} service for parts and labor and includes free telephone support^{Note 3} 24 x 7. Global coverage^{Note 2} ensures that any product purchased in one country and transferred to another non-restricted country will remain fully covered under the original warranty and service offering. One-year onsite and labor are not available in all countries.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply. Other warranty variations may be offered in your region.

NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.

NOTE 3: Technical telephone support applies only to HP-configured Compaq and third-party HP-qualified hardware and software. Toll-free calling and 24 x 7 support may not be available in some countries.

Memory

DDR SYNCH DRAM NON-ECC MEMORY

AMD 760G chipset supports non-ECC DDR3 memory up to PC3-10600 (1333-MHz). Memory upgrades are accomplished by adding single or dual DIMMs of the same or varied sizes. This chart does not represent all possible memory configurations.

CAUTION: You must shut down the computer and **disconnect the power cord** before adding or removing memory modules. Regardless of the power-on state, voltage is always supplied to the memory modules as long as the computer is plugged in to an active AC outlet. Adding or removing memory modules while voltage is present may cause irreparable damage to the memory modules or system board.

HP recommends dual-channel symmetric configurations for maximum performance.

For best performance, add the same amount of total memory to each channel and do not mix speeds. For dual-channel symmetric performance, the total amount of memory in each channel must be equal. If speeds are mixed, speed will default to the slowest DIMM.

STANDARD MEMORY

1-GB, 2-GB, 3-GB or 4-GB DDR3 SYNCH DRAM

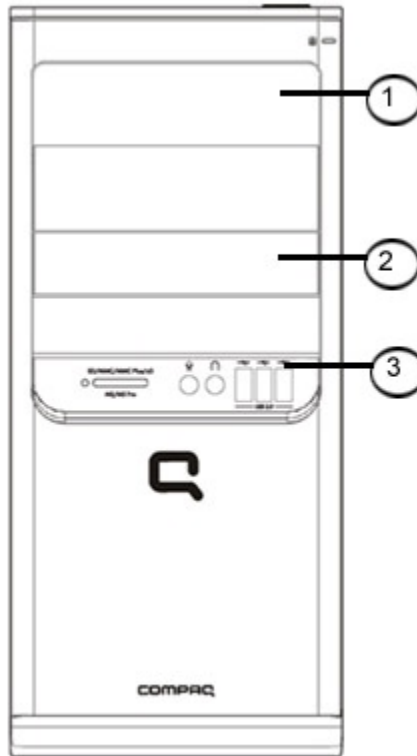
OPTIONAL MEMORY UPGRADES

Supports up to 4 GB of DDR3 SYNCH DRAM. Not all memory configurations possible are represented below.

NOTE: For systems configured with more than 3 GB of memory and a 32-bit operating system, all memory may not be available due to system resource requirements. Addressing memory above 4 GB requires a 64-bit operating system.

DIMM Size	Slot 1	Slot 2
1-GB	1-GB	
2-GB (dual-channel symmetric)	1-GB	1-GB
3-GB	1-GB	2-GB
3-GB	2-GB	1-GB
4-GB (dual-channel symmetric)	2-GB	2-GB

Storage



Maximum Quantity Supported

- 1. Optical Drive
- 2. 3.5" Serial ATA Hard Drive
- 3. Front I/O

1
1
3
1

Controller

SATA
SATA
USB 2.0 port
Media Reader

Technical Specifications - Audio

**Integrated Realtek
ALC662 Audio**

Type	Integrated
HD Audio compatible codec	Yes 5:1 channel
Sampling	Supports 48/96 KHz
Audio Jacks	Mic-In Line-In Line-Out / Headphone Out
Power Support	Digital: 3.3V Analog: 5V
Other	Meets performance requirements for audio on PC99/2001 systems High-performance DACs with 97dB SNR(A-Weighting) ADCs with 90dB NR(A-Weighting)

Technical Specifications - Communications

Integrated Realtek RTL8105E 10/100 Fast Ethernet Controller	Controller	8105E
	Memory	N/A
	Data rates supported	2.5GHz data rate with X1 link width
	Compliance	IEEE802.3, IEEE 802.3u, IEEE 802.3ab
	Bus architecture	PCIexpress 1.1
	Data transfer mode	Half/Full Duplex Operation
	Hardware certifications	MS NDIS5, IPv4, Ipv6, TCP, UDP
	Boot ROM support	EEPROM, 1Kb, 2Kb
	Network transfer rate	10/100Mbps over CAT.5 10Mbps over CAT.3
	Dimensions	9mm x 9mm
	Management capabilities	ACPI rev 2.0, PM rev 1.1, ASPM v1.0a

Technical Specifications - Input Devices

Compaq USB Standard Keyboard	Physical characteristics	Keys	104, 105, 106, 107, 109 layout (depending upon country)
		Dimensions (L x W x H)	18.14 x 1.07 x 6.02 in (46.1 x 2.74 x 15.3 cm)
	Electrical	Weight	1.3lb(0.6 kg) minimum
		Operating voltage	+ 5VDC ± 5%
		Power consumption	50-mA maximum (with three LEDs ON)
		ESD	CE level 4, 12.5-kV air discharge
	Mechanical	EMI - RFI	Conforms to FCC rules for a Class B computing device
		Microsoft PC 99 - 2001	Functionally compliant
		Languages	40 available
		Keycaps	Silm design
		Switch actuation	60-g nominal peak force with tactile feedback
		Switch life	10 million keystrokes (using Hasco modified tester)
		Switch type	Contamination-resistant switch membrane
		Key-leveling mechanisms	N/A
		Cable length	1.5 m
		Microsoft PC 99 - 2001	Mechanically compliant
	Environmental	Acoustics	50-dBA maximum sound pressure level
		Operating temperature	50° to 122° F (10° to 50° C)
		Non-operating temperature	-22° to 140° F (-30° to 60° C)
		Operating humidity	10% to 90% (non-condensing at ambient)
		Non-operating humidity	20% to 80% (non-condensing at ambient)
		Operating shock	40g, six surfaces
		Non-operating shock	80g, six surfaces
		Operating vibration	2-g peak acceleration
		Non-operating vibration	4-g peak acceleration
		Drop (out of box)	30 in (76 cm) on carpet, 5-drop sequence
	Drop (in box)	30 in (76 cm) on rigid surface, 10-drop sequence	
	Approvals	ULcUL, FCC, CE, TUV/Bauart, VCCI, BSMI, C-Tick, KCC	
	Ergonomic compliance	N/A	

Technical Specifications - Input Devices

Compaq USB 2-Button Optical Scroll Mouse	Scroll Wheel	24
	Maximum Rotation Speed	48 rats/sec
	Switch Type	wheel
	Switch Life	Button - 1,000,000 Wheel - 200,000 times
	Environmental	Operating Temperature 32° to 104° F (0° to 40° C) Non-operating Temperature -4° to 140° F (-20° to 60° C) Operating Humidity 10% to 90% (non-condensing at ambient) Non-operating Humidity 20% to 80% (non-condensing at ambient) Operating Shock 40 g, six surfaces Non-operating Shock 80 g, six surfaces Operating Vibration 2-g peak acceleration Non-operating Vibration 4-g peak acceleration
	Electrical	Operating Voltage 4.35V-5.25V DC Power Consumption <100mA MTBF > 150,000 hrs ESD IEC-61000-4-2 criteria B, Contact discharge: +/- 4kV, Air discharge: +/- 8kV EMI-RFI FCC Class B PC98 PC 99 Compliant
	Mechanical	Resolution 500±10% DPI Tracking Speed 25 cm/sec Acceleration 0.5mm Switch Actuation 0.6N (60gf) Switch Life Button - 1,000,000 Wheel - 200,000 times Cable Length 1.8m PC98-99 PC99 compliant
	Regulatory Approvals	ULcUL, FCC, CE, TUV/GS, VCCI, BSMI, C-Tick, MIC

Technical Specifications - Hard Drives

Serial ATA Hard Drives 750 GB (7200 rpm)

Capacity	720,176,893,706 bytes	
Height	1 in (2.54 cm)	
Width	Media diameter: 3.5 in (8.89 cm) Physical size: 4 in (10.2 cm)	
Interface	Serial ATA (3.0 Gb/s)	
Synchronous Transfer Rate (Maximum)	3.0 Gb/s	
Buffer	8 MB	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track	2.0 ms
	Average	11 ms
	Full-Stroke	21 ms
Rotational Speed	7,200 rpm	
Logical Blocks	976,773,168	
Operating Temperature	41° to 131° F (5° to 55° C)	

640 GB

Capacity	640,138,063,380 bytes	
Height	1 in (2.54 cm)	
Width	Media diameter: 3.5 in (8.9 cm) Physical size: 4 in (10.2 cm)	
Interface	Serial ATA (3.0 Gb/s)	
Synchronous Transfer Rate (Maximum)	Up to 3 Gb/s	
Buffer	8 MB	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track	2.0 ms
	Average	11 ms
	Full-Stroke	21 ms
Rotational Speed	7,200 rpm	
Logical Blocks	625,142,448	
Operating Temperature	41° to 131° F (5° to 55° C)	

500 GB

Capacity	500,107,862,016 bytes	
Height	1 in (2.54 cm)	
Width	Media diameter: 3.5 in (8.89 cm) Physical size: 4 in (10.2 cm)	
Interface	Serial ATA (3.0 Gb/s)	
Synchronous Transfer Rate (Maximum)	3.0 Gb/s	
Buffer	8 MB	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track	2.0 ms
	Average	11 ms
	Full-Stroke	21 ms
Rotational Speed	7,200 rpm	
Logical Blocks	976,773,168	
Operating Temperature	41° to 131° F (5° to 55° C)	

320 GB

Capacity	320,072,933,376 bytes	
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Technical Specifications - Hard Drives

Height	1 in (2.54 cm)	
Width	Media diameter: 3.5 in (8.9 cm) Physical size: 4 in (10.2 cm)	
Interface	Serial ATA (3.0 Gb/s)	
Synchronous Transfer Rate (Maximum)	Up to 3 Gb/s	
Buffer	8 MB	
Seek Time (typical reads, includes controller overhead, including settling)	Single Track	2.0 ms
	Average	11 ms
	Full-Stroke	21 ms
Rotational Speed	7,200 rpm	
Logical Blocks	625,142,448	
Operating Temperature	41° to 131° F (5° to 55° C)	

Technical Specifications - Optical Storage

HP SATA SuperMulti LightScribe DVD Writer Drive	Height	5.25-inch, half-height, tray-load																		
	Orientation	Either horizontal or vertical																		
	Interface type	SATA/ATAPI																		
	Disc capacity	8.5 GB DL or 4.7 GB standard																		
	Dimensions (W x H x D)	5.9 x 1.7 x 8.0 in (15.0 x 4.4 x 20.3 cm)																		
	Weight (max)	2.6 lb (1.2 kg)																		
	Write speeds	<table border="0"> <tr><td>DVD-RAM</td><td>Up to 12X</td></tr> <tr><td>DVD+R</td><td>Up to 16X</td></tr> <tr><td>DVD+RW</td><td>Up to 8X</td></tr> <tr><td>DVD+R DL</td><td>Up to 8X</td></tr> <tr><td>DVD-R DL</td><td>Up to 8X</td></tr> <tr><td>DVD-R</td><td>Up to 16X</td></tr> <tr><td>DVD-RW</td><td>Up to 6X</td></tr> <tr><td>CD-R</td><td>Up to 48X</td></tr> <tr><td>CD-RW</td><td>Up to 32X</td></tr> </table>	DVD-RAM	Up to 12X	DVD+R	Up to 16X	DVD+RW	Up to 8X	DVD+R DL	Up to 8X	DVD-R DL	Up to 8X	DVD-R	Up to 16X	DVD-RW	Up to 6X	CD-R	Up to 48X	CD-RW	Up to 32X
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CD-R	Up to 48X																			
CD-RW	Up to 32X																			
	Read speeds	<table border="0"> <tr><td>DVD-RAM</td><td>Up to 12X</td></tr> <tr><td>DVD+R/-R/+RW/-RW/+R DL /-R DL</td><td>Up to 8X</td></tr> <tr><td>DVD-ROM DL</td><td>Up to 8X</td></tr> <tr><td>DVD-ROM, DVD+R, DVD-R</td><td>Up to 16X</td></tr> <tr><td>CD-ROM, CD-R</td><td>Up to 48X</td></tr> <tr><td>CD-RW</td><td>Up to 32X</td></tr> </table>	DVD-RAM	Up to 12X	DVD+R/-R/+RW/-RW/+R DL /-R DL	Up to 8X	DVD-ROM DL	Up to 8X	DVD-ROM, DVD+R, DVD-R	Up to 16X	CD-ROM, CD-R	Up to 48X	CD-RW	Up to 32X						
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DVD-ROM DL	Up to 8X																			
DVD-ROM, DVD+R, DVD-R	Up to 16X																			
CD-ROM, CD-R	Up to 48X																			
CD-RW	Up to 32X																			
	Access times (typical reads, including setting)	<table border="0"> <tr><td>Random</td><td>DVD: < 140 ms (typical), CD: < 125 ms (typical)</td></tr> <tr><td>Full Stroke</td><td>DVD: < 250 ms (seek), CD: < 210 ms (seek)</td></tr> </table>	Random	DVD: < 140 ms (typical), CD: < 125 ms (typical)	Full Stroke	DVD: < 250 ms (seek), CD: < 210 ms (seek)														
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Full Stroke	DVD: < 250 ms (seek), CD: < 210 ms (seek)																			
	Power	<table border="0"> <tr><td>Source</td><td>SATA DC power receptacle</td></tr> <tr><td>DC Power Requirement</td><td>5 VDC ± 5%-100 mV ripple p-p 12 VDC ± 5%-200 mV ripple p-p</td></tr> <tr><td>DC Current</td><td>5 VDC - <1000 mA typical, < 1600 mA maximum 12 VDC - < 600 mA typical, < 1400 mA maximum</td></tr> </table>	Source	SATA DC power receptacle	DC Power Requirement	5 VDC ± 5%-100 mV ripple p-p 12 VDC ± 5%-200 mV ripple p-p	DC Current	5 VDC - <1000 mA typical, < 1600 mA maximum 12 VDC - < 600 mA typical, < 1400 mA maximum												
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	Environmental (all conditions non-condensing)	<table border="0"> <tr><td>Temperature</td><td>41° to 122° F (5° to 50° C)</td></tr> <tr><td>Relative Humidity</td><td>10% to 90%</td></tr> <tr><td>Maximum Wet Bulb Temperature</td><td>86° F (30° C)</td></tr> </table>	Temperature	41° to 122° F (5° to 50° C)	Relative Humidity	10% to 90%	Maximum Wet Bulb Temperature	86° F (30° C)												
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Technical Specifications - Environmental Data

Eco-Label Certifications and declarations

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	37.40 W	37.00 W	NA
Sleep (low power mode)	3.19 W	3.25 W	NA
Off	1.77 W	1.83 W	NA
Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	128 BTU/hr	127 BTU/hr	NA
Sleep	11 BTU/hr	11 BTU/hr	NA
Off	6 BTU/hr	6 BTU/hr	NA

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions

(in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	4.2	30
Fixed Disk (random writes)	4.5	33

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater than 5ppm by weight
- Cadmium greater than 10ppm by weight

Battery size: CR2032 (coin cell)

Battery type: Lithium

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive – 2002/95/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.
- This product contains 0% post consumer recycled plastic (by wt.)
- This product is 90% recyclable when properly disposed of at end of life.

Packaging Materials

- External:
 - Corrugated 1680 g
- Internal:
 - EPE- Expanded Polyethylene 115 g
 - Polyethylene low density 40 g
- The Corrugated packaging material is made from 80% recycled content.
- The EPE- Expanded Polyethylene packaging material is made from 80% recycled content.
- The Polyethylene low density packaging material is made from 80% recycled content.

RoHS Compliance

Hewlett-Packard is committed to compliance with all applicable environmental laws and



Technical Specifications - Environmental Data

regulations, including the European Union Restriction of Hazardous Substances (RoHS) Directive. HP's goal is to exceed compliance obligations by meeting the requirements of the RoHS Directive on a worldwide basis. By July 1, 2006, RoHS substances will be virtually eliminated (virtually = to levels below legal limits) for all HP electronic products subject to the RoHS Directive, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at:

http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
- Nickel finishes that release greater than 0.5 micro-grams/cm²/week, measured according to EN 1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

Packaging

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Hewlett-Packard Corporate Environmental

For more information about HP's commitment to the environment:
Global Citizenship Report
<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>



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Information

Eco-label certifications

<http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

ISO 14001 certificates:

<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

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